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## THE MORE IMPORTANT RECORDS FOR JULY 1936

The grasshopper situation continued to be very serious throughout July. During the month extensive flights were reported from the Dakotas, Montana, Iowa, Nebraska, and Kansas.

The alfalfa weevil has recently been reported from Fall River County, S. Dak., Daves and Box Butte Counties, Nebr., Eagle County, Colo., and Harney County, Oreg.

Webworms (Loxostege spp.) were seriously abundant in Minnesota, North Dakota, Nebraska, and Utah, and several thousand acres of cotton were ruined by the garden webworm in Oklahoma.

Japanese beetle is generally prevalent throughout the Middle Atlantic States.

A new infestation of the introduced weevil Calonycterus setarius Roelofs was discovered at Fairfield, Conn.

Associated with the hot, dry weather, heavy infestations of red spiders on a wide variety of plants were reported from Maryland westward through Kentucky and Ohio to the Pacific coast, and southward to the Gulf.

A detailed hessian fly survey for Ohio is reported in this number of the Bulletin. The infestation is about one-half of that reported in 1935.

Hot, dry weather early in July accelerated the movement of chinch bugs from small grains and grass into corn. Scattered damage was reported throughout the greater part of the chinch bug belt.

The fall armyworm developed outbreak numbers in parts of Puerto Rico during the early part of July. During the third week in the month this insect was found in several parts of Florida.

Heavy infestations of rose chafer were reported from Wisconsin and Minnesota.

The peak of codling moth emergence occurred during the first week in the month in the Middle Atlantic States and during the second week in the East Central States. Heavy injury is reported in the latter region.

The raspberry sawfly was discovered for the first time in Fremont County, Idaho, in June.

Heavy populations of the grape leafhopper were reported from Utah and California.

Serious damage to walnuts and pecans by the walnut caterpillar was reported from Nebraska southward to south Texas.

Blister beetles were generally prevalent and destructive in Maryland westward to North Dakota and Kansas, being particularly prevalent in the regions where grasshoppers have been occurring in the last few years.

The false chinch bug was reported in destructive numbers from Michigan to the Dakotas and Kansas.

The Colorado potato beetle was especially numerous in the Lake States.

The turnip seed weevil (Ceutorhynchus assimilis Payk.) is established in western Washington and Oregon, and is doing considerable damage to mustard and cabbage seeds.

The squash bug was generally abundant over the Middle Atlantic and East Central States and westward to Colorado.

A tortoise beetle, Gratiana pallidula Boh., was reported to be injuring eggplants in the District of Columbia and in Ohio.

Over the greater part of the Cotton Belt from Oklahoma eastward boll weevil was generally scarce. In Texas control measures were necessary over the greater part of the State.

On July 17 the cotton leaf worm was recorded from Tallulah, La., and on July 16 from Jefferson County, Ark.

Cotton aphids were reported as very abundant in Tennessee, Louisiana, and Mississippi.

The satin moth seems to have been increasing in destructiveness throughout the New England States.

The mountain ash sawfly is causing considerable defoliation of mountain ash in the northern New England States.

An unusual infestation of pine by Tortrix pallorana Rob. was reported from Michigan.

During the month 11 cases of Rocky Mountain spotted fever have been reported from Maryland. This brings the year's total to 17 cases, 4 of which have been fatal. The American dog tick has been very prevalent in the State this year.

Screw worm infestations were generally reduced in the Southeastern States, but are still quite numerous in the West, cases having been recorded from Texas northward to northern Oklahoma.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Ohio. T. H. Parks (July 18): Serious injury to one field of corn was reported from Preble County on July 18. Bran-mash bait was applied. One fruit grower in Erie County applied bran mash to protect young trees. Grasshoppers are unusually scarce in meadows and pastures elsewhere in the State.
- Indiana. J. J. Davis (July 20): Grasshoppers are being reported from widely separated points in the State, but in only six northern counties are the infestations general. Melanoplus mexicanus Sauss. is full grown. M. differentialis Thos. is present in rather large numbers, the majority being from one-half to two-thirds grown.
- Illinois. W. P. Flint (July 20): Many areas in the northern three-fourths of the State are being damaged by grasshoppers. They are more abundant in the central counties with bad spots in the northwestern and northern parts of the State. Many of the hoppers are still in the second instar, while many others are full grown. The principal species in the northern part of the State is M. differentialis. In the other parts of the State the differential and the red-legged grasshopper (M. femur-rubrum Deg.) are the two species most commonly found.
- Wisconsin. E. L. Chambers (July 20): The red-legged grasshopper has done serious injury to alfalfa and corn over a rather large area in Waukesha County this summer. This species has never before been recorded in Wisconsin as serious. M. mexicanus and Camnula pellucida Scudd. have done serious injury to hay and small grains and are beginning on the corn in 12 southern counties that had never heretofore been seriously damaged by grasshoppers. Active campaigns for control are in progress in 18 counties and nearly 1,000 tons of mixed bait have already been used.
- Minnesota. A. G. Ruggles (July 22): Grasshoppers are becoming quite abundant in Hennepin, Ramsey, and Washington Counties, destroying garden crops and stripping leaves from trees in orchards. A few other counties in the western part of the State have hoppers building up a population.
- Iowa. C. J. Drake (July 24): Grasshoppers are doing a lot of damage in western and southern Iowa. In the central and southern parts of the State hatching is not yet completed. The hatch has been very irregular over the entire State this year. This has made control very difficult. In 14 of 15 counties they have destroyed over 50 percent of the oats and barley. Alfalfa, sweetclover, and red clover have suffered extensively. Over 75 percent of the new plantings have been destroyed in from 40 to 50 counties. Old plantings of alfalfa have suffered extensively where untreated. Corn growing adjacent to sweetclover, alfalfa, small-grain, and pasture fields has suffered a great deal from the hoppers. The two-lined (M. bivittatus Say), the lesser migratory locust (M. mexicanus), and the differential are the three most common species. The differential hatched much later than the other two species. Many apple trees are

being defoliated and willows, poplars, and other trees in the heavily infested area have been almost entirely defoliated.

Missouri. L. Haseman (July 24): The grasshopper situation is still serious. The entire western half of the State was involved in the epidemic this year and the damage has been due largely to the red-legged grasshopper, combined with apparently the migratory species (M. mexicanus), the differential, and the two-lined. Many acres of corn have been completely stripped where poisoned bait was not promptly used, and garden crops, alfalfa, and other field crops have suffered. Between four and five million pounds of bran has been used in bait, and fortunately the bait this year has apparently given unusually good kills.

North Dakota. F. Gray Butcher (July 21): Grasshoppers are reported as very abundant in 20 counties and moderately abundant in the remainder of the State, except in the eastern counties. During the recent period of extremely high temperatures, numerous small flights of hoppers were reported, which has resulted in a somewhat more general distribution throughout the State. Some destruction to flax and corn is being reported.

South Dakota. H. C. Severin (July 18): The drought has become state-wide and naturally the grasshopper situation has become worse. We are having a terrific outbreak of grasshoppers, and they are destroying much of the grass on the ranges. They are also moving into alfalfa, corn, and cane, and are doing much damage. M. bivittatus, M. mexicanus, M. differentialis, Dissosteira carolina L., Aulocara elliotti Thos., C. pellucida, Mestobregma kiowa Thos., and Metator pardalinus Sauss. are the most important species. Only a few counties in the extreme eastern section of the State are not infested. We are having flights of grasshoppers from the south.

Nebraska. M. H. Swenk (July 24): From June 20 to July 19 infestation increased markedly, both in extent and intensity. During the first 10 days in June the area of damage increased to include northeastern and southwestern Nebraska, and Dawes County, in northwestern Nebraska. Between June 10 and 20 most of central Nebraska, outside of the sandhills, and the southern part of the Panhandle became new centers of damage. During the month following, the infested area increased so as to involve 83 of the 93 counties. About 2,000 tons of poisoned bran-mash bait were distributed, exclusive of large amounts distributed by individual farmers; yet crop damage has been severe in many places. The species chiefly responsible for crop damage have been the two-striped, the differential, the red-legged, and the lesser migratory grasshoppers. On June 24 a spectacular flight of the lesser migratory grasshopper occurred across southeastern Nebraska. The insects were sighted late in the morning in south-central Nebraska, in the vicinities of Hebron, in Thayer County; Nelson, in Nuckolls County; Clay Center, in Clay County; Hastings, in Adams County; and as far west and south as Franklin, in Franklin County. Around midday they were noted at York, in York County; Seward, in Seward County; and Crete, in Saline County. They were first noted above Lincoln about 1 p.m., and reached Omaha, in Douglas County, Nebraska City, in Otoe County, and western Iowa about 3 p.m. The course of the flight was from southwest to northeast and at times and places there were large numbers

in the air. On June 27 a similar flight of this species was noted in Dawson County, especially in the vicinity of Lexington. Specimens from these flights were in many cases unusually long-winged individuals of the lesser migratory grasshopper, suggesting something of an approach to the Rocky Mountain grasshopper (M. mexicanus, migratory phase spretus Walsh). There was also a heavy flight of Mestobroga kiowa in the eastern part of Dawson County on July 9, when large numbers of individuals of this species dropped into the streets of Overton. About the middle of July scattered localities all over eastern Nebraska, from as far north as Hartington, in Cedar County, south to Lincoln, reported loose flights of D. carolina and D. longipennis Thos., in some of which the insects were abundant. Many of these migrating grasshoppers were reported to be infested with the locust mite (Eutrombidium trigonum Hermann).

Kansas. H. R. Bryson (July 23): During the past month the grasshoppers have done some damage to crops in practically every county in the State, Melanoplus differentialis, M. bivittatus, and M. mexicanus being most abundant. Young peach trees have been stripped of their leaves, the bark of twigs girdled, and the green fruit destroyed. Professor G. A. Dean found them causing considerable injury to nursery trees at Manhattan. Adults of M. mexicanus were flying into fields, so that a new population came into the nursery from elsewhere. They were observed clustered and feeding on the fruits, leaves, and on the bark of the smaller twigs of Osage orange. A high percentage of them are parasitized by Sarcophaga kellyi Ald. Parasites, applied control measures, and extremely high temperatures have had a decided effect during the past week in reducing the grasshopper population.

Tennessee. G. M. Bentley (July 16): The County Agent in Humphreys County reported on July 2 that M. femur-rubrum had ravaged more than 100 acres and seemed to be spreading.

Mississippi. C. Lyle (July 23): A complaint of serious injury was received from Pace on June 27. Corn, cotton, soybeans, and alfalfa were being attacked. M. differentialis was the chief species concerned, although other species were present.

Arkansas. D. Isely (July 22): Arkansas is experiencing the first severe general outbreak of which the Department of Entomology has any record. There have been local outbreaks before, but none which compare in any way with the present one. About 115,000 acres of row crops have been damaged, including corn, cowpeas, soybeans, and cotton, with the worst damage to corn. Most of this injury is in the northern two tiers of counties, about 83,000 acres being in the north tier of counties. The heavily infested area is more than double that in which serious injury has occurred. The species involved in order of importance are M. differentialis, M. mexicanus, and M. femur-rubrum.

Oklahoma. C. F. Stiles (July 25): Grasshoppers are continuing to destroy corn, cotton, and legumes throughout the greater part of Oklahoma. The entire State with the exception of the southeast corner is heavily infested. The severe drought has caused the farmers to slacken their fight against

this pest in all of the State except where cotton is grown. The hoppers are extremely difficult to control at this time, owing to high temperatures which cause the poison to dry out rapidly. They have taken to the trees and shrubs throughout the State and to the cotton fields where the cotton is largest and can afford them shade. The species most numerous are M. differentialis, M. bivittatus, M. mexicanus, and M. femur-rubrum. Grasshoppers (Xanthippus corallipes pantherinus Scudd.) invading Stillwater arrived just about dusk on June 10, being attracted by thousands to the lights. (Det. A. B. Gurney.)

Colorado. G. M. List (July 23): Hoppers continue to present a serious problem in some sections of the State. The infestation in the high altitudes and in the foothill areas is greater than was anticipated, and considerable damage is being done.

Idaho. C. Wakeland (July 22): Grasshoppers are slightly above normal in a few localities in southwestern and southeastern Idaho, and poisoning for control is being done in a small way in Ada, Jerome, Bannock, and Bear Lake Counties.

Utah. G. F. Knowlton (July 22): Hoppers are moderately abundant and attacking a wide variety of crops.

Oregon. B. G. Thompson (July): Grasshoppers are quite serious in the Willamette Valley for the first time in many years.

California. S. Lockwood (July 7): We are having considerable trouble from M. devastator Scudd. in the Sacramento and San Joaquin Valleys.

H. J. Ryan (July 20): Grasshopper infestations, the more prevalent species being the valley grasshopper (Oedaleonotus enigma Scudd.) and the lesser migratory locust (M. mexicanus) have been reported on beans growing near Newhall, in Los Angeles County. Inspection revealed that they had almost completely eaten 15 acres of beans, although some of the damage can be attributed to the drought. Bait has been applied along the foothills adjacent to the bean fields and results have been excellent.

#### MORMON CRICKET (Anabrus simplex Hald.)

Idaho. C. Wakeland (July 22): Mormon cricket control has been successful to the extent that it has protected growing crops from severe destruction, but the population in the State as a whole remains so large as to be alarming. Many new infestations have developed since last season. Organized control has been under way on a state-wide basis since April 1. At peak times over 400 men have been employed in operating dust guns. Kills have been exceptionally high and many bands have been completely wiped out without noticeably reducing the population. An undetermined species of wasp is attacking the crickets generally throughout the State. It first stings its victim, then drags it into a burrow in the ground and deposits a single egg on the left side of the thorax. The egg later hatches and the larva of the wasp consumes its host.

Utah. C. J. Sorenson (July 22): Mormon crickets in outbreak numbers have been observed in Juab County between Tintic and Sheeprock Mountains. Ranchers reported that this infestation extends over an area approximately 10 by 18 miles. Crickets have not been observed by ranchers in this locality in recent years until about a month ago.

COULEE CRICKET (Peranabrus scabricollis Thos.)

Washington. I. W. Bales (July 20): Coulee crickets are unusually numerous in Chelan County this season. Counts of dead crickets after dusting showed a population of 96 per square foot.

FIELD CRICKET (Gryllus assimilis Fab.)

South Dakota. H. C. Severin (July 18): Black field crickets are very abundant this year, more so than usual, on corn, alfalfa, and garden crops, and as household pests, chiefly in the western part of the State.

EUROPEAN EARWIG (Forficula auricularia L.)

New York. E. L. Denny (July 13): Specimens were found at the trunk of an apple tree in Rochester. The insect was identified by A. B. Gurney, who states: "This species has been established at Aurora near Buffalo for the past 10 years, therefore it is not strange to find it at Rochester."

Washington. E. W. Jones (July 21): Earwigs have been giving considerable trouble because of their invasion of houses in Walla Walla. In the older infested parts of the city they are as abundant as usual. They have spread throughout the entire city.

ARMYWORM (Cirphis unipuncta Haw.)

Wisconsin. E. L. Chambers (July 20): Outbreaks of armyworms have occurred in Pierce, Langlade, Douglas, and Wood Counties.

VARIEGATED CUTWORM (Lycophotia margaritosa saucia Hbn.)

Ohio. T. H. Parks (July 26): A serious outbreak of this cutworm is occurring on two celery farms near Cleveland. Celery is being badly damaged.

WEBWORMS (Loxostege spp.)

Minnesota. A. G. Ruggles (July 22): Adults of the sugar beet webworm (L. sticticalis L.) are very abundant at Wheaton. The larvae are destroying truck crops at Forest Lake and Anoka, corn leaves at Appleton, flax in Yellow Medicine County, and sugar beets in Clay County.

North Dakota. F. Gray Butcher (July 21): Sugar beet webworms have caused some injury to flax and gardens, particularly in the northern part of the State.

Utah. G. F. Knowlton (July 22): Although sugar beet webworm moths have been



A SCARABAEID (Ochrosidia immaculata Oliv.)

Kentucky. W. A. Price (July 25): The flight was delayed this year. The first heavy flight was observed at Lexington on July 12. Eggs and small larvae are common in pasture sod and near manure piles.

JAPANESE BEETLE (Popillia japonica Newm.)

New England. L. H. Worthley (July 18): Japanese beetles were first noted in New Hampshire at Concord on June 30 and at Keene on July 7. In Massachusetts the first beetle was taken in Boston on July 9, the day the traps were set. Sixteen hundred traps have been placed by the park department of Springfield, Mass. The first beetles caught in the city-owned traps were captured on June 27. The traps are now catching an average of 1,000 beetles per day. They caught 1,600 beetles on July 4.

Connecticut. W. E. Britton (July 22): Adults are very numerous in certain localities in Bridgeport, Hartford, and New Haven, and several complaints and inquiries have been received. Specimens have been brought to the office from Hamden, New Haven, and Southport.

Rhode Island. A. E. Stene (July 24): The Japanese beetle is increasing in abundance, especially in and around Providence.

New York and New Jersey. L. H. Worthley (July 27): It is apparent that there are heavy infestations of the Japanese beetle in practically all of the metropolitan district surrounding New York City. One of the heaviest infestations is reported on Governors Island in New York Harbor. The beetles have eaten the ivy that covers a part of the immigration station on Ellis Island. Staten Island may be considered generally infested with considerable damage in all parts of the island. The beetles have also reached the nuisance stage in Brooklyn from Fort Hamilton north to the Columbia Heights section. Reports of heavy infestation on Long Island have been received from Flushing, Bayside, Coney Island, and Long Beach. Upper Manhattan and the Bronx are also invaded with a greatly increased population, complaints having been received from the Kingsbridge Road in the Bronx, Manhattan College, and Van Courtlandt Park. Communities along the Hudson River north to Hastings-upon-Hudson are badly infested. Heavy infestations have been observed in sections of Essex and Hudson Counties in New Jersey.

T. L. Guyton (July 15): The first beetle was noticed on June 17. Beetles were numerous on fruit and shade trees at Bound Brook the first week in July.

Delaware. L. A. Stearns (July 24): Injury in the northern part of New Castle County is very severe--about at a maximum for the current season and possibly for the cycle of infestation as well.

Maryland. E. N. Cory (July 16): A great many reports of injury to roses, grapes, and most other plants are coming in from practically all over the State.

L. H. Worthley (July 18): Scout crews on the western shore of Maryland have been finding beetles rather consistently in nursery and greenhouse establishments and on farms. This year is the first time the crews have found beetles on the large bean-growing farms in Anne Arundel County. A few beetles were also captured at a sand pit in the northern part of the 9th election district of Baltimore County, a few hundred yards from the boundary of the regulated area. During the period June 25 to July 8, crews found beetles on 9 nursery and greenhouse premises, within 500 feet of 2 other commercial establishments, at 5 sand and soil establishments, and on 26 heretofore uninfested bean farms. Illustrative of the degree to which the population is building up on the Eastern Shore of the State is the removal of 165 beetles from 365 hampers of string beans inspected at Princess Anne in Somerset County.

West Virginia. D. L. Van Dine (July 20): Three specimens of adults were sent to this office by the county agent of Taylor County, with the report that they had been taken at Grafton.

A WEEVIL (Calomycterus setarius Roelofs)

Connecticut. M. P. Zappe (July 23): Adults began emerging about the middle of June. Many present on lespedeza, desmodium, and other legumes at Stratford. Also crawling up sides of houses in infested area. Now infestation found at Fairfield, where adults were feeding on clover in field.

Maryland. E. N. Cory (July 15): C. setarius is again abundant in Towson district, first appearing about June 21. Infestation nearly at an end. Found them in open field feeding on alfalfa on July 13.

COMMON RED SPIDER (Tetranychus telarius L.)

Ohio. T. H. Parks (July 22): The red spider is now very abundant on roses and other garden plants.

Wisconsin. E. L. Chambers (July 20): Serious infestations of red spider mites have been observed and reported from all over the State on evergreens, perennials, and raspberry bushes, on account of the severe dry spell for the past 3 weeks.

Kentucky. W. A. Price (July 25): Red spiders are very abundant over the State generally.

South Dakota. H. C. Severin (July): This pest is becoming more abundant and has done much damage to garden crops, hedge plants, trees, and flowering plants.

Missouri. L. Haseman (July 24): For the past 3 weeks red spider has been attracting attention on shrubs and raspberry, moving into orchards in northwestern Missouri and in some parts of southwestern Missouri.

Oklahoma. F. A. Fenton (July 20): On account of the dry weather, the infestation of red spiders is increasing at this time and is present in a good many cotton fields.

Mississippi. C. Lyle (July 23): During the dry weather of June, conifers in all parts of the State were seriously injured. Fewer complaints have been received since the general rains early in July, but this pest is still fairly abundant in most sections.

California. C. S. Morley (July 6): Red spider is doing considerable injury to ornamental trees in Kern County. Some sycamore trees are completely brown from spider injury.

Washington. E. J. Newcomer (July 27): Red spider is becoming numerous on hops in the Yakima Valley.

## CEREAL AND FORAGE - CROP INSECTS

### WHEAT

#### HESSIAN FLY (Phytophaga destructor Say)

Ohio. T. H. Parks (July 22): The annual wheat insect survey made just before harvest showed the following percentages of straw infestation for each county:

Butler, 50.8	Harrison, 9.6	Medina, 4.4	Stark, 25.0
Champaign, 6.4	Henry, 4.8	Miami, 5.8	Summit, 13.8
Clermont, 25.7	Highland, 21.0	Montgomery, 20.4	Tuscarawas, 16.8
Columbiana, 14.2	Holmes, 7.4	Pickaway, 15.8	Trumbull, 5.8
Crawford, 8.0	Huron, 7.4	Portage, 7.8	Van Wert, 8.2
Darke, 14.4	Jefferson, 14.0	Putnan, 1.2	Wayne, 2.5
Delaware, 9.0	Knox, 11.4	Ross, 9.5	Wood, 1.4
Hardin, 5.4	Mahoning, 15.8	Seneca, 12.6	Warren, 24.9

The average infestation for the State is 12.4 percent, as compared to 26.4 percent in 1935. In only a few counties was there an increase. Practically no commercial loss resulted, as the infested straws did not lodge. Drought and heat caused heavy mortality in July. In one Pickaway County field only 4 percent of the puparia contained healthy larvae when examined on July 20.

Michigan. R. Hutson (July 17): Hessian fly caused considerable damage about Lapeer.

#### BLACK GRAIN-STEM SAWFLY (Trachelus tabidus Fab.)

Delaware. E. J. Udine (July 10): Surveys showed light infestations of T. tabidus in wheat fields throughout the State.

Maryland. E. J. Udine (July 10): Surveys showed the prevalence of light infestations of sawfly in wheat fields throughout the principal wheat-

growing regions.

Virginia. E. J. Udine and J. S. Pinckney (June 26): Surveys showed sawflies present in wheat fields in Fauquier, Loudoun, Shenandoah, Rockingham, Augusta, Westmoreland, King George, Caroline, Prince William, and Campbell Counties. There were insufficient numbers in any county to cause economic loss.

Pennsylvania. E. J. Udine (July 15): T. tabidus was generally prevalent throughout western Pennsylvania, and was particularly heavy west of Indiana County. Not as much damage was done as in previous years because the wheat ripened and was harvested shortly before the mature larva had completed severance of the wheat stem.

Ohio. E. J. Udine (July 15): Heavy infestations of sawfly were found in the eastern part of the State in Columbiana, Mahoning, and Stark Counties, with light infestations in Portage and Trumbull Counties.

#### EUROPEAN WHEAT STEM SAWFLY (Cephus pygmaeus L.)

Pennsylvania. E. J. Udine (July 15): The European wheat stem sawfly occurred in moderate but widespread infestations in most of the wheat fields of eastern Pennsylvania. It was not prevalent west of Centre County.

#### CORN

##### CHINCH BUG (Blissus leucopterus Say)

South Carolina. F. Sherman and associates (July 22): There have been several local outbreaks of chinch bug on corn in the lower piedmont area, apparently correlated with early season drought.

Ohio. T. H. Parks (July 22): While almost annihilated by the low temperatures of last winter, chinch bugs have made a remarkable come-back in some counties, especially in the northeastern part of the State. This was on account of the extremely dry weather of May, June, and July. We have received isolated reports of migrating chinch bugs from 10 counties in northeastern Ohio and from 6 counties in other parts of the State.

Indiana. J. J. Davis (July 20): Chinch bug infestations have developed in many sections of the State, especially the western tier or two of counties from Lake County on the north to Greene County on the south. There is no general infestation, the outbreaks being scattered, but, with the ideal chinch bug conditions, we may anticipate a rather large second brood.

C. M. Packard (July 10): Limited migrations of chinch bugs from a few fields of small grain, mostly winter wheat, to corn have been in progress since about June 27 in several northwestern counties. In most cases damage is limited to the first few rows. Many bugs now maturing and flying.

- Illinois. W. P. Flint (July 20): The weather for the past month has been highly favorable to chinch bug development and these insects are causing trouble at scattered points throughout the central part of the State. They are largely local, no general area of destruction occurring.
- Michigan. R. Hutson (July 17): Chinch bugs are reported to be numerous in a few cornfields near Galien in Berrien County.
- Wisconsin. E. L. Chambers (July 20): With an almost total absence of green grass and with small grains harvested ahead of schedule already burned up by dry weather, chinch bugs appeared in epidemic numbers and moved into corn in Pierce, Pepin, Dunn, Rock, and Walworth Counties.
- Minnesota. A. G. Ruggles (July 22): In Wabasha and Goodhue Counties a few chinch bugs are showing up; however, they are not yet doing much damage and are only moderately abundant.
- Iowa. C. J. Drake (July 24): Chinch bugs are quite abundant throughout the southern half of Iowa, the intense heat not having reduced their numbers. Slight damage has been done in small grains and cornfields.
- Missouri. L. Haseman (July 24): In June, when the migration of chinch bugs occurred, most farmers succeeded in keeping them out of their corn and no serious complaints have been received.
- Kansas. H. R. Bryson (July 23): Chinch bugs are fairly plentiful at Manhattan, but are doing no damage. Some damage was reported in the southern part of the State by E. G. Kelly and R. H. Painter.
- Mississippi. D. W. Grimes (July 23): Severe damage occurred on corn at Belzoni, but the bugs were soon controlled by the general rains early in July.

HAIRY CHINCH BUG (Blissus hirtus Montd.)

- Connecticut. W. E. Britton (July 22): Specimens and injured grass have been received from lawns in Bristol and Westport.

CORN EAR WORM (Heliothis obsoleta Fab.)

- Indiana. E. V. Walter (July 20): Infestation of corn ear worm at Lafayette is very light. Two fifth-instar larvae found on July 8 pupated by July 13.

J. J. Davis (July 20): Examined 12 ears of corn grown near Lafayette on July 17 and found 7 ears with small to full-grown worms.

- Iowa. E. V. Walter (July 3-5): Observations on sweet corn showed infestation ranging from 8 to 80 percent, consisting mostly of eggs from Hubbard northward and of larvae farther south to Farnington, where some were in the third instar.

Nebraska. M. H. Swenk (July 24): Pupae perished last winter. Only one report of injury has been received, that being from Lancaster County on June 29. The moths have been unusually uncommon at the light trap at Lincoln.

Kansas. H. R. Bryson (July 23): Corn ear worms were plentiful in early sweet corn. They are in the pupal stage and some moths have emerged.

Tennessee. G. M. Bentley (July 16): The corn ear worm was working on corn tassels on June 26 at Manchester, in Coffee County.

Alabama. J. M. Robinson (July 16): Corn ear worms are moderately abundant on corn in central Alabama.

Utah. G. F. Knowlton (July 6): The first moths were collected in light traps at Spanish Fork and Syracuse on the night of June 28-29.

Washington. R. S. Lehman (July 21): The corn ear worm appeared earlier than usual and is extensively damaging sweet corn.

#### STALK BORER (Papaipema nebris nitela Guen.)

New York. R. E. Horsey (June 26): The stalk borer was found in soft shoots of climbing roses and in catnip stalks nearby.

New Jersey. E. Kostal (July 7): The stalk borer is abundant and destructive at Morganville. Hosts attacked include sweet corn, zinnia, sunflower, cosmos, tomato, and strawberry, the latter being attacked in the leaf petioles.

Minnesota. A. G. Ruggles (July 22): P. nitela is damaging corn in Le Sueur County.

Nebraska. M. H. Swenk (June 24): The common stalk borer was reported to have taken about 40 rows in a field of corn in Cuming County.

#### LESSER CORNSTALK BORER (Elasmopalpus lignosellus Zell.)

Georgia. T. L. Bissell (July 14): Caterpillars are injurious to late beans and cowpeas at Experiment.

Tennessee. G. M. Bentley (June 27): The lesser cornstalk borer was found damaging corn in Franklin County.

#### CORN ROOT WEBWORM (Crambus caliginosellus Clem.)

Tennessee. G. M. Bentley (July 16): The bud worm (C. caliginosellus) was reported on corn on June 27 in Polk, Benton, and Unicoi Counties.

CARROT BEETLE (Ligyrus gibbosus Deg.)

Tennessee. G. M. Bentley (July 16): The carrot beetle was reported damaging corn in Hickman County on June 29.

Minnesota. A. G. Ruggles (July 22): L. gibbosus is attacking coreopsis and gaillardia in Hennepin County and carrots and lettuce in Stearns County.

CORN LEAF APHID (Aphis maidis Fitch)

Mississippi. C. Lyle (July 23): A very heavy infestation on corn and sorghum was found at Houston on July 13.

ALFALFA

ALFALFA WEEVIL (Hypera postica Gyll.)

South Dakota. J. C. Hamlin (June): Larvae collected in Fall River County. (Det. by A. G. Boving.)

Nebraska. J. C. Hamlin (June): Adults from western Nebraska (Det. by L. Buchanan); also larvae from Dawes County. (Det. by A. G. Boving.)

Colorado. J. C. Hamlin (June): Larvae collected in Eagle County. (Det. by A. G. Boving.)

California. A. E. Michelbacher (July 21): The highest larval count for the alfalfa weevil encountered per 100 sweeps of an insect net in the San Joaquin Valley on July 17 was 103, while 92 was the highest average number collected in the San Francisco Bay area on July 20.

PLANT BUGS (Lygus spp.)

Utah. C. J. Sorenson (July 22): L. elisus Van D. and L. elisus hesperus Knight are very abundant throughout the entire State, particularly in alfalfa-seed fields.

VETCH

VETCH BRUCHID (Bruchus brachialis Fahraeus)

North Carolina. J. S. Pinckney (July 18): The vetch bruchid is heavily infesting vetch seed in North Carolina in the following counties: Alexander, Anson, Catawba, Cabarrus, Davidson, Davie, Forsyth, Gaston, Guilford, Iredell, Lincoln, Mecklenburg, Montgomery, Randolph, Rowan, Richmond, Stanly, Union, and Yadkin. The records of infestation in Alexander, Anson, Montgomery, and Richmond are new areas of infestation. Infestation in all fields ran at least 50 percent, with maxima as high as 90 percent.

GRASS

FALL ARMYWORM (Laphygma frugiperda S. & A.)

North Carolina. C. H. Brannon (July 28): Infestations in Duplin, Pasquotank, Sampson, Wake, and Wayne Counties are numerous and severe damage is being done to grasses and corn.

Florida. J. R. Watson (July 20): Specimens of the fall armyworm have been received from several parts of the State.

Puerto Rico. G. N. Wolcott (July 13): An outbreak of caterpillars on malajillo and other grasses, and, to a lesser extent, on young sugarcane, has been noted around Rio Piedras, extending at least as far east as the Trujillo Alto Road, and as far west as Toa Baja. Such outbreaks are expected during the wet winter months, and it is somewhat surprising to have one occur in midsummer. This may possibly be due to the exceptionally heavy rains of the past 2 months. The last-instar caterpillars are not the typical gray color, but more yellow or greenish, in some cases with contrasting black markings.

F R U I T I N S E C T S

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York. D. W. Hamilton (July): From July 6 to 16 new larval entrances at Poughkeepsie were more numerous than at any previous time this season. In poorly sprayed orchards entrances are unusually numerous. Practically all spring-brood moth activity had ceased by July 8. Although first-brood adults began emerging as early as July 10, the light- and bait-trap captures still indicate a light flight in the orchards. Comparatively heavy second-brood injury is anticipated.

Delaware. L. A. Stearns (July 24): The peak of codling moth activity occurred on the nights of July 8 and 9. Early hatched second-brood larvae were entering fruit in considerable numbers during the week of July 12-18.

Ohio. T. H. Parks (July): Second-brood emergence started at Wooster on July 10, in Ottawa County on July 15, and near Cleveland on July 18. The bait pans have caught moths at Columbus almost continuously since May 16. Largest numbers of first-brood moths were caught between May 21 and June 6. Heavy catches have occurred since July 14 and are still in progress. We look for a heavy second brood. From 50- to 60-percent entrances are common on some unsprayed trees.

Indiana. L. F. Steiner (July 23): At Vincennes the same bait traps that in May and June caught 1,300 moths have captured approximately 2,000 since June 30, and at Bicknell (17 miles northeast) 11,500 have been caught during July in traps that captured only 5,500 spring-brood moths. At

Vincennes the peak activity occurred on the nights of July 5, 7, and 11, and at Bicknell moths were most abundant on July 10 and 13, almost a month earlier than in 1935. There is evidence that the sustained high temperatures, which exceeded 100° F. for a total of 25 hours from July 11 to 14 with maximums of 110° to 111°, caused considerable mortality among moths at Vincennes. This is the first season in several years that first-brood adults were more abundant than those of the spring brood. The percentage of fruit already wormy is greater than ever before observed in numerous orchards in this region, and a heavy third-brood attack is still in prospect.

Illinois. W. P. Flint (July 20): Owing to unusually favorable weather conditions, injury has increased and the infestation in southern Illinois is fully as heavy as it was in 1934. Even in orchards where five first-brood cover sprays were applied, damage is rather heavy.

Michigan. R. Hutson (July 17): The emergence of second-brood moths was reported on July 15 from our stations at Buchanan, Eau Claire, Hartford, Albion, and Lawton.

Missouri. L. Haseman (July 24): The second-brood moths in southwestern Missouri began emerging around June 20, reaching a peak the last 2 or 3 days in June, then letting up for a few days because of heavy rains, and again reaching a lower peak around the 10th and 11th of July. In central Missouri emergence began the last of June, reaching a preliminary peak on the 28th and 29th, followed by a lull and another peak between the 9th and 11th of July. In northwestern Missouri slow emergence began the last of June, reaching a peak on July 4 to 6, and continuing high until the 15th. As in 1934, the excessive high temperatures during the first 3 weeks in July have practically stopped second-brood egg laying and hatching, for very few second-brood worms have shown up in southwestern Missouri, practically none in central Missouri, and numbers are below normal in most orchards in northern Missouri.

Washington. E. J. Newcomer (July 27): Adults of first-brood moths began appearing in baits at Yakima on July 12 and were abundant by July 18. Second-brood larvae were hatching by July 20.

Oregon. B. G. Thompson (July): Second-brood moths (first generation) emerged on July 17. Second-generation eggs were laid on July 20.

California. S. Lockwood (July 20): Codling moths are not so prevalent on the Sacramento River as at this time last year. In Lake County moths are flying in considerable numbers for that section.

#### APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York. N. Y. State Coll. Agr. News Letter (July 6): In the Hudson Valley apple maggot flies are emerging in large numbers and a general upward trend for the daily fly catches is evident. The ratio of females to males is about 2½ to 1. Normally, this would indicate that the peak of emergence is still a few days away. (July 20): Apple maggots are found

in some orchards in Suffolk County.

New Jersey. E. Kostal (July 7): Flies were first seen on apple trees at Morganville, Monmouth County, on June 26.

Ohio. T. H. Parks (July 22): Flies failed to emerge this year in a trap set for that purpose, and have not been seen on apple foliage. Indications point to this insect's being very scarce in northeastern Ohio, where it is usually troublesome.

Wisconsin. C. L. Fluke (July 21): First fly emerged in Crawford County on June 17, the same date as in 1935.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Connecticut. P. Garman (July 22): Very general outbreak of European red mite in many parts of the State. Enemies are scarce in most orchards.

Ohio. T. H. Parks (July 22): The European red mite has been reported to be very abundant in some orchards of northern Ohio.

PEACH

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Connecticut. P. Garman (July 22): Apparently the plum curculio is more abundant in New Haven County on apples than it was a year ago. Not serious in sprayed orchards.

Delaware. L. A. Stearns (July 24): The peak of abundance of first-brood adults at Bridgeville occurred on July 2.

New Jersey. M. Kisliuk, Jr. (June 26): Nine larvae taken out of the fruit of Black Oxheart cherry at Bergenfield, Bergen County, on June 20. (Det. by A. G. Boving.)

South Carolina. F. Sherman and associates (July 22): Peach and plum curculio is apparently below normal. Unsprayed trees under observation have matured more worm-free fruits than usual.

Georgia. O. I. Snapp (July 6): Second-generation larvae are now appearing in Elbertas at Fort Valley, the last commercial variety of peach to ripen in the Georgia peach belt. Although the second-brood attack is not heavy, a number of reports of damage have been received. This second generation was produced under drought. (July 20): The harvest of the cleanest peach crop in 10 or 15 years has just been completed at Fort Valley. Although second-brood larvae attacked the Elbertas, the infestation was not heavy and little damage was done.

Alabama. J. M. Robinson (July 16): The peach curculio is very abundant in central Alabama.

ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Connecticut. P. Garman (July 22): Second-generation tip infestation showing up conspicuously in some orchards. The northern portions of the State generally are free.

Delaware. L. A. Stearns (July 24): Although parasitization of first-brood twig-infesting larvae was subnormal, a decided increase has been recorded in the case of the second brood.

South Carolina. F. Sherman and associates (July 22): Injury is decidedly below normal.

Georgia. O. I. Snapp (July 20): The infestation in yard trees and home orchards at Fort Valley continues lighter than usual. The insect has done no damage whatever in the commercial peach orchards of this locality.

Illinois. W. P. Flint (July 20): Has been very abundant in the southern part of the State, particularly in the section where we have a peach crop.

TARNISHED PLANT BUG (Lymus pratensis L.)

Vermont. H. L. Bailey (July 23): The tarnished plant bug is unusually abundant, particularly on potato plants throughout the State. Many small leaves and branchlets have been killed back.

Michigan. R. Hutson (July 17): Tarnished plant bug has been reported damaging peaches at Fennville, St. Joseph, Sodus, Albion, Jackson, Howell, and Pontiac.

Tennessee. G. M. Bentley (July 16): On July 13 tarnished plant bug was found on peach in a nursery at Knoxville. The injury is causing a setback to young peach trees. Observed by C. B. Shankle, inspector.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York. N. Y. State Coll. Agr. News Letter (July): The pear psylla continues to be a serious problem for pear growers in the Hudson Valley. The insect is also doing considerable damage in western New York.

CHERRY

CHERRY FRUIT FLY (Rhagoletis cingulata Loew)

Oregon. S. C. Jones (July): Emergence of R. cingulata occurred in Willamette Valley on June 1. Oviposition occurred on June 17 and hatching on the 23rd. Maggots were full grown on July 7.

BLACK CHERRY APHID (Myzus cerasi Fab.)

New York. N. Y. State Coll. Agr. News Letter (July 13): A heavy infestation of black cherry aphid was noted in one block of sour cherries in Monroe County.

CHERRY FRUIT WORM (Grapholitha packardii Zell.)

Washington. E. J. Newcomer (July 27): The infestation of cherry fruit worm in the vicinity of Seattle and Tacoma is about the same as in 1935.

RASPBERRY

RASPBERRY SAWFLY (Monophadnoides rubi Harr.)

Ohio. E. W. Mendenhall (July 15): The raspberry sawfly caused serious damage to red raspberry patches near Dayton, Montgomery County.

Idaho. C. Wakeland (July 22): The raspberry sawfly was discovered in Fremont County in June, the first record of its occurrence in Idaho.

RASPBERRY FRUIT WORM (Byturus unicolor Say)

Ohio. E. W. Mendenhall (July 1): The raspberry byturus was found in a number of red raspberry plantations in central Ohio. It is claimed that usually it is found in northern Ohio in the red varieties.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York. N. Y. State Coll. Agr. News Letter (July 20): Nymphs are becoming very numerous in some vineyards in Wayne County.

Delaware. L. A. Stearns (July 24): Infestation over the entire State is light. Special spray for control of this pest applied in but a few vineyards.

South Carolina. F. Sherman and associates (July 22): Grape leafhopper is now prevalent in the college vineyard at Clemson College.

Michigan. R. Hutson (July 17): Eggs were deposited in numbers from June 4 to 15. Nymphs began to appear at Hartford, Paw Paw, and Coloma on June 15, with a peak hatch from June 24 to 30.

Nebraska. M. H. Swenk (July 24): On June 25 a Pawnee County correspondent reported the grape leafhopper attacking woodbine and the pest was reported damaging grapevines in Franklin County on July 10.

Utah. G. F. Knowlton (July 23): Injury to grapes and Virginia creepers is becoming more serious and general throughout northern Utah. Serious injury is now apparent in many localities.

California. C. S. Morley (July 6): Considerable spraying for the control of the grape leafhopper has been done in the northern part of Kern County.

GRAPE TOMATO GALL (Lasiapteryx vitis O. S.)

Michigan. R. Hutson (July 17): The grape tomato gall was reported from Cass City, where it was quite numerous.

CRANBERRY

BLUNT-NOSED LEAFHOPPER (Euscelis striatulus Fall.)

Wisconsin. E. L. Chambers (July 20): The blunt-nosed leafhopper, believed to be the only important carrier of the virus disease of cranberries (false blossom), was unusually abundant in the central part of the State and aeroplane dusting of several large bogs was carried on recently.

PECAN AND WALNUT

PECAN NUT CASE BEARER (Acrobasis caryae Grote)

Texas. C. B. Nickels (July 20): In southern Texas first-generation larvae destroyed from one-third to two-thirds of the total crop of pecans, and in central and western Texas from one-fourth to one-half of the crop.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Nebraska. M. H. Swenk (July 24): A Douglas County correspondent reported on June 24 that the walnut caterpillar was attacking his walnut trees.

Kansas. H. R. Bryson (July 23): Reports received of the walnut datana on black walnut.

Oklahoma. F. A. Fenton (July 13): There is quite a severe defoliation of pecan and walnut trees in Oklahoma by the walnut datana. Last year the second brood of this species practically stripped the pecan trees late in the season. (July 20): The first brood of the walnut datana has completed the larval stage and the larvae are now in the soil as pupae. Widespread defoliation of walnuts and pecans throughout the State has occurred.

Texas. C. B. Nickels (July 20): In southern, central, and western Texas damage to pecan by the walnut caterpillar in May and June was extensive but irregular. Some trees were nearly completely defoliated, while other nearby trees suffered slight or no injury. Defoliated trees will be unable to mature a crop this season or set many nuts next year.

CITRUS

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

Arizona. C. D. Lebert (June 24): Infestation of three citrus trees was found

in the northern Phoenix area. These and the surrounding trees were sprayed. Ten days later the entire bloc (20 trees) was fumigated. The same treatment was given to a row of oleanders in the city of Phoenix.

CITRUS MEALYBUG (Pseudococcus citri Risso)

Florida. J. R. Watson (July 20): Mealybugs have been unusually active in the citrus belt.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (July 20): The latter half of June and the first half of July was relatively dry in the citrus belt of Florida, with the result that rust mite persisted in considerable numbers.

CITRUS RED MITE (Paratetranychus citri McG.)

California. H. J. Ryan (July 20): A number of citrus orchards in Los Angeles County have considerable infestations of citrus mite, notwithstanding the warm weather that prevailed for several days prior to this time, and some control measures will have to be taken.

FIG

MEXICAN MEALYBUG (Phenacoccus gossypii T. & C.)

Florida. E.W. Berger and G. B. Merrill (July 21): The cotton mealybug is very abundant on a tree of edible figs in a yard at Pensacola.

T R U C K - C R O P I N S E C T S

BLISTER BEETLES (Meloidae)

Maryland. E. N. Cory (July 16): Three species of blister beetles, Epicauta cinerea Forst., E. cinerea marginata Fab., and E. pennsylvanica Deg., have been found infesting dahlias at Centerville.

Indiana. J. J. Davis (July 20): Blister beetles, E. cinerea marginata, E. pennsylvanica, and E. vittata Fab., have been abundant in gardens in central Indiana, attacking potatoes, swiss chard, beets, and other garden crops.

Kentucky. W. A. Price (July 25): Blister beetles are abundant in the blue-grass district.

Minnesota. A. G. Ruggles (July 22): Lytta nuttalli Say is damaging beans in Hubbard County.

Iowa. C. J. Drake (July 24): Blister beetles are unusually abundant throughout the entire area infested with grasshoppers. E. pennsylvanica, E. cinerea, and E. vittata seem to be the most common species.

North Dakota. F. Gray Butcher (July 21): Blister beetles have become very abundant, especially in the southwestern part of the State. Several potato fields have been entirely destroyed, and gardens and shrubs have been seriously damaged. E. maculata Say and Macrobasis unicolor Kby. predominate, but E. pennsylvanica and L. nuttalli are also present.

South Dakota. H. C. Severin (July 17): Blister-beetle damage is continuing to be very severe. Injury is occurring in all sections of the State.

Nebraska. M. H. Swenk (July 24): Many species of blister beetles have been very numerous and injurious, working especially on potatoes and tomatoes, as well as on other garden crops.

Kansas. H. R. Bryson (July 23): Blister beetles (Epicauta sp.) are very abundant in the State this year. On account of the scarcity of weeds and green vegetation in some localities, this pest has concentrated on tomatoes and other garden crops. In some gardens beet tops have been stripped.

Oklahoma. C. F. Stiles (July 25): Several species of blister beetles have been reported generally throughout the State. They are doing some damage to alfalfa fields and garden and truck crops. On the courthouse yard at Beaver they are defoliating the Chinese elms.

Mississippi. C. Lyle (July 23): The blister beetle E. lemniscata Fab. was reported causing damage to cotton at Florence on July 5 and serious injury to tomatoes, eggplants, peppers, and flowers at Carriere on July 8.

#### WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon. D. C. Mote (July): D. soror is more numerous and is doing more damage in the Willamette Valley than it has for the past 5 years. Considerable damage has been done this year by larvae on corn and cucurbit roots. Reported by B. F. Thompson.

#### FALSE CHINCH BUG (Nysius ericae Schill.)

Michigan. R. Hutson (July 17): The false chinch bug has been reported as injuring berries at Fennville, Greenville, and St. Joseph.

Minnesota. A. G. Ruggles (July 22): Reported from Big Stone County as very abundant and doing some damage to corn.

North Dakota. F. Gray Butcher (July 21): False chinch bugs have become very abundant over a wide area of the State, feeding on garden crops, cereals, raspberries, and other plants.

South Dakota. H. C. Severin (July 18): We are having the worst outbreak we have ever had. Damage to garden truck, alfalfa, flax, and small fruits is continuing at the present time. The raspberry crop is ruined over much of the State.

Nebraska. M. H. Swenk (July 24): From Knox, Custer, and Holt Counties early in July, came complaints of the false chinch bug infesting gardens.

Kansas. H. R. Bryson (July 23): False chinch bug very abundant in some localities. Reported as very abundant on cantaloupe vines at Manhattan.

PALE-STRIPED FLEA BEETLE (Systema blanda Melsh.)

Michigan. R. Hutson (July 17): Pale-striped flea beetle is numerous at Lowell on beans and at Ovid on mint.

WESTERN CABBAGE FLEA BEETLE (Phyllotreta pusilla Horn)

Nebraska. M. H. Swenk (July 24): The western cabbage flea beetle was especially injurious to crucifers during the period from June 21 to July 20, throughout the State.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York. N. Y. State Coll. Agr. News Letter (July 6): Adult beetles are abundant on late upland potatoes that are just nicely up in Cayuga County.

Ohio. B. J. Landis (July 2): First-brood larvae, which were very abundant at Columbus late in June, are now scarce. New beetles are very numerous and have migrated to eggplant, Solanum dulcamara, bull thistle, tomato, tobacco, wild groundcherry, and petunia. (July 16): Egg masses are now present on late potato and a few larvae are found on S. dulcamara and bull thistle. The tachinid parasite Doryphorophaga doryphorae Riley was not so numerous in first-brood larvae as in 1935, the average parasitization being 23 percent.

Wisconsin. E. L. Chambers (July 20): The Colorado potato beetle, almost scarce for the past 5 years, has returned as a major pest throughout Wisconsin this summer.

Minnesota. A. G. Ruggles and assistants (July): Colorado potato beetle observed in great abundance in many places scattered throughout the State.

Utah. G. F. Knowlton (July 13): About 150 acres will be sprayed for the Colorado potato beetle in Ogden and Roy, in Weber County, and Sunset, in Davis County, including all farms within the limits of the infested area, although on many of them no beetles have been found.

C. J. Sorenson (July 22): A few Colorado potato beetles have been found near Clinton, in Davis and Weber Counties.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Wisconsin. C. L. Fluke (July 21): Potato flea beetles are unusually abundant in southern Wisconsin, causing damage to tomatoes and potatoes.

Tennessee. G. M. Bentley (July 16): The flea beetle was reported on June 27 on potatoes in Unicoi County.

Colorado. G. M. List (July 23): The potato flea beetle has been very abundant in many localities of the State. Much injury has been done to garden crops and to some field crops.

Washington. I. W. Bales (July 20): Potato flea beetles (E. cucumeris) were collected in Kittitas County, near Cle Elum, on July 7. This insect caused considerable injury to the potatoes in that vicinity last season, as well as in Yakima County.

R. S. Lehman (July 21): The western potato flea beetle (E. subscrinita Lec.) reported earlier in the season as injurious to tomato plants, still persists on the foliage of tomato, eggplant, and potato. It is unusual for the flea beetle to persist so late in the season.

#### POTATO LEAFHOPPER (Empoasca fabae Harr.)

Connecticut. N. Turner (July 22): Heavy infestation of the potato leafhopper on dahlias at Mt. Carmel with much dwarfing, tipburn, and leaf curl.

New York. N. Y. State Coll. Agr. News Letter (July 6): Leafhoppers are very numerous on potatoes in Cayuga County, causing many tips to wilt.

Michigan. R. Hutson (July 17): Potato leafhopper appeared on alfalfa and potatoes at East Lansing about July 1.

Minnesota. A. G. Ruggles and assistants (July): Potato leafhopper observed as very abundant in several localities.

South Dakota. H. C. Severin (July 18): Potato leafhopper is very serious this year on potato and caragana generally over the State.

#### A LEAFHOPPER (Empoasca filamenta DeLong)

Idaho. C. Wakeland (July 22): E. filamenta is causing noticeable injury to potato vines in Bonneville County.

#### CORN EAR WORM (Heliothis obsoleta Fab.)

South Carolina. F. Sherman and associates (July 22): Prevalence of the tomato fruit worm in tomato fruits is normal or slightly below.

Ohio. H. C. Mason (July 23): At South Point the tomato fruitworm is less abundant than for the last 2 years.

Kentucky. W. A. Price (July 25): Corn ear worms are causing a great deal of damage to tomatoes. Practically 100 percent of the ears of sweet corn are infested.

Mississippi. C. Lyle and assistants (July 23): The corn ear worm has been

reported as especially injurious in Jackson and Harrison Counties during July. It was reported as doing severe damage to tomatoes in several fields at Grenada.

Utah. G. F. Knowlton (July 6): Corn ear worms are damaging early sweet corn at Bountiful. The first worm was found attacking tomatoes today at Willard. Moths were taken in light traps at Spanish Fork and Syracuse on the night of June 28.

California. A. E. Michelbacher (July 21): An examination of the tomato fields about Visalia, Tulare County, on July 16 showed that the amount of fruit infested ranged from about 1 to 6 percent. Adults of H. phloxiphaga G. & R. have been common in tomato fields for a number of weeks.

TOMATO PINWORM (Gnorimoschema lycopersicella Busck)

California. A. E. Michelbacher (July 21): Larvae of the tomato pinworm were found in tomato fields about Visalia on July 16. About 5 percent of the fruit was infested in two fields.

Pennsylvania. C. A. Thomas (July 17): On account of strenuous clean-up measures, and especially owing to crop rotation which omitted the fall tomato crop in most Chester County greenhouses, the tomato pinworm has become very much reduced in numbers, being found at the present date, July 7, only in two greenhouses in the Kennett Square area. It has also been practically cleaned up in the New Castle area.

California. J. C. Elmore (July 8): An examination of 50 ripe fruits in three tomato fields in Orange County showed that 20, 30, and 54 percent of them were infested.

TOMATO WORM (Phlegethontius sexta Johan.)

Ohio. B. J. Landis (July 10): At Columbus tomato hornworm larvae are quite numerous on late potatoes.

Kansas. H. R. Bryson (July 23): Tomato hornworms are quite abundant. Tomatoes have been seriously injured by the drought, which accentuates the injury by the pests.

California. J. C. Elmore (July 17): Eighty tomato hornworms per acre were observed in experimental tomato plots at Irvine. Serious damage to tomatoes was reported in this same locality last year.

TOMATO PSYLLID (Paratrioza cockerelli Sulz.)

Colorado. G. M. List (July 23): The tomato psyllid is only moderately abundant. It did not make its usual increase in numbers in the Fort Collins section during the past month. A few plantings are showing indications of yellows.

Wyoming. M. Greenwald (July 11): Psyllids first noticed on potatoes and tomatoes in Park County at Powell on July 10. A little leaf curl is beginning to show on tomato. No symptoms of purple top to be seen in potato fields.

POTATO APHID (Illinoia solanifolii Ashm.)

Connecticut. N. Turner (July 17): Several small fields of Irish Cobbler potatoes in Connecticut Valley have been killed by this aphid. Some infestation on late potatoes and many growers have found it necessary to apply special sprays. Tomato plants in Guilford and West Haven are heavily infested.

New York. N. Y. State Coll. Agr. News Letter (July 20): Aphids were present on potatoes in large numbers last week, but seem to be disappearing now on Long Island.

New Jersey. T. L. Guyton (July): Potato aphid observed on tomatoes and potatoes and was very numerous at Bound Brook on July 6, and at Clayton, Bridgeton, and Millville on the 9th.

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

Connecticut. N. Turner (July 23): Beans not treated with insecticides have been defoliated in many places by the Mexican bean beetle, which is about as abundant as last year.

New Jersey. E. Kostal (July 7): The Mexican bean beetle has been practically eliminated in some garden patches by persistent dusting and spraying. Noted at Morganville, in Monmouth County, on July 7.

Delaware. L. A. Stearns (July 24): Infestation of Mexican bean beetle is generally much lighter than usual over the entire State.

North Carolina. C. H. Brannon (July 25): The Mexican bean beetle is seriously damaging beans throughout the State.

South Carolina. F. Sherman and associates (July 22): The Mexican bean beetle was late in spring emergence, slow in increasing, and is still decidedly below normal.

Georgia. T. L. Bissell (July 15): Many complaints of damage to snap beans in central Georgia.

Ohio. T. H. Parks (July 22): This insect has made a rapid come-back from the few beetles which survived the winter, but the infestation at Columbus and in northern Ohio is still somewhat below average.

N. F. Howard (July 20): The Mexican bean beetle is less numerous at Columbus and South Point than for several years. Severe drought and high temperatures have been unfavorable for beans as well as beetles.

Indiana. J. J. Davis (July 20): Mexican bean beetle showed signs of becoming extremely abundant but the intense heat has caused a very high mortality. G. E. Gould has observed large numbers of larvae and pupae turning brown and dying from the heat, and pupae are having difficulty in completing their transformations.

Michigan. R. Hutson (July 17): Mexican bean beetles are feeding on a field of bindweed at East Lansing and on beans at South Haven.

Tennessee. G. M. Bentley (July 16): Reported on June 29 as doing damage in Robertson, McNairy, and Wayne Counties.

Alabama. J. M. Robinson (July 16): During the drought period the larvae have not developed. The adults have lived through the drought and since recent rains inquiries for control measures have been coming in from the central and northern parts of the State.

Mississippi. C. Lyle and assistants (July 23): The Mexican bean beetle was collected at Meridian on June 24. This is the first record in Lauderdale County. A complaint of injury on beans at Houlka, in Chickasaw County, was received on June 30. The drought during June caused this pest to be scarce in northeastern Mississippi.

Colorado. G. M. List (July 23): The Mexican bean beetle is very abundant in northern Colorado. The overwintering adults appeared in plantings in the Fort Collins district, as many as two adults to each foot of row. Untreated plantings are largely defoliated.

#### PEAS

##### PEA APHID (*Illinoia pisi* Kalt.)

Georgia. O. I. Snapp (July 21): J. R. Thomson, Jr., reports an unusually heavy infestation of aphids on field peas in gardens at Fort Valley.

Iowa. C. J. Drake (July 24): The pea aphid has been reported as doing a considerable amount of damage in alfalfa and clover fields in the vicinity of Cedar Rapids and Waterloo. Some damage has also been done to cultivated peas.

Utah. G. F. Knowlton (July 11): Serious losses in yield and quality in peas from pea aphid have resulted throughout northern Utah, with scattered fields not being worth cutting.

Oregon. K. W. Gray (July): The pea aphid was first noticed at Astoria on May 21 and peas are now heavily infested.

LIMA BEAN POD BORER (Etiella zinckenella Treit.)

Oregon. D. C. Mote (July): Ninety percent of the pods of Lathyrus (beach pea) at Sunset Beach are infested with lima bean pod borer.

CABBAGE

IMPORTED CABBAGE WORM (Ascia rapae L.)

Ohio. T. H. Parks (July 22): The imported cabbage worm is present on cabbage in normal numbers and indications point to a heavy outbreak in the late cabbage.

Minnesota. A. G. Ruggles (July 22): Imported cabbage worm is very abundant.

South Dakota. H. C. Severin (July 18): Cabbage worm is very abundant.

Nebraska. M. H. Swenk (July 24): A Blaine County correspondent complained of cabbage worms on June 30.

Colorado. G. M. List (July 24): The imported cabbage worm is very abundant in cauliflower and cabbage plantings in central and northern Colorado.

CABBAGE APHID (Brevicoryne brassicae L.)

Tennessee. G. M. Bentley (July 16): This pest is unusually prevalent in Benton, Franklin, and Jefferson Counties.

Iowa. C. J. Drake (July 24): Cabbage aphids have been reported as doing considerable damage to cabbage in the vicinity of Cedar Rapids. Some plantings have been badly injured.

ONION THRIPS (Thrips tabaci Lind.)

Virginia. W. J. Schoene (June 26): There is a very heavy infestation of nymphs of thrips on cabbage in the cabbage-growing district and the injury is quite severe and widespread. (Identified by J. C. Crawford.)

A WEEVIL (Ceutorhynchus assimilis Payk.)

Washington. I. W. Bales (July 20): Turnip seed weevils were collected on cabbage plants on June 24 in Island County, near Coupeville. This insect is also well established in Skagit County.

Oregon. K. W. Gray (July): C. assimilis is very injurious on mustard and cabbage seed in the Willamette Valley and at Scappoose, Columbia County. Fifty percent of the crop is attacked.

MELONS

MELON APHID (Aphis gossypii Glov.)

North Carolina. C. H. Brannon (July 10): This aphid is seriously damaging watermelon and cantaloup in Scotland County.

South Dakota. H. C. Severin (July 18): The melon aphid is just starting on melons and cucumbers in eastern South Dakota.

Missouri. L. Haseman (July 24): Since the middle of July there has been an unusually heavy outbreak on melons in southwestern Missouri. Notwithstanding the abundance of ladybeetles, syrphid flies, and hymenopterous parasites, the aphid has seemingly been able to do more damage during July than we have ever before known it to do.

Arkansas. D. Isely (July 23): There has been a rather severe outbreak on cantaloups in the southwestern Arkansas cantaloup belt.

Nebraska. M. H. Swenk (July 24): Melon aphid was reported attacking cucumber plants in Pierce County on July 1.

Kansas. H. R. Bryson (July 23): The infestation at Manhattan has increased rapidly during the past week. If the hot, dry weather continues, all melons and cucumbers will suffer.

Oklahoma. F. A. Fenton (July 20): Melon aphid is causing serious injury to melons and cucurbits.

Mississippi. C. Lyle (July 23): Caused a great deal of damage to watermelons in the vicinity of Holly Springs.

SQUASH

SQUASH BUG (Anasa tristis Deg.)

Maryland. G. Myers (July 24): The squash bug is very abundant on squash in my garden on Avery Road about  $2\frac{1}{2}$  miles east of Rockville. Almost every plant of the winter Hubbard squash has been killed, but the summer Crookneck seems to be less attractive to the insect and has not been seriously damaged.

Indiana. J. J. Davis (July 20): Squash bug was reported as abundant at Roachdale, in Putnam County, on July 3.

South Dakota. H. C. Severin (July 18): Squash bug is more abundant than usual on cucumbers and melons in eastern South Dakota.

Missouri. L. Haseman (July 24): During the month there has been a marked pick-up in the abundance of squash bugs and a good many complaints from growers have reached this office.

Nebraska. M. H. Swenk (July 24): The squash bug was reported to be damaging squashes in Lancaster, Douglas, and Scotts Bluff Counties.

Oklahoma. F. A. Fenton (July 20): The squash bug is causing injury to squashes.

Colorado. G. M. List (July 23): Unusually abundant this season. Many plantings have been destroyed. During one afternoon the bugs were observed to be resting on 27 out of 50 label stakes in an experimental plot of tomatoes, adjoining a small planting of squash, but no squash was growing in the same field.

#### EGGPLANT

##### EGGPLANT TORTOISE BEETLE (Gratiana pallidula Boh.)

District of Columbia. W. H. White (June): Specimens were brought to this office with a report that the insect was injuring eggplant in a garden at Takoma Park, Washington, D. C. (Det. by H. S. Barber.)

Ohio. B. J. Landis (July 20): Larvae, pupae, and adults were present on eggplant at South Point and feeding holes were apparent.

##### EGGPLANT LACEBUG (Gargaphia solanii Heid.)

Mississippi. C. Lyle and assistants (July 23): Lacebugs were injuring eggplants at Aberdeen and Cleveland.

#### ASPARAGUS

##### ASPARAGUS BEETLE (Crioceris asparagi L.)

Washington. E. W. Jones (July 15): Adults, eggs, and larvae of the second brood of asparagus beetles have been observed at Walla Walla. Damage to young asparagus plants is very apparent and beetles were found on nearly every plant. The second brood of beetles are much more numerous than the first brood, which were present in the field on April 16.

#### ONIONS

##### ONION THRIPS (Thrips tabaci Lind.)

Indiana. J. J. Davis (July 20): Onion thrips reported as damaging onion at Ligonier on June 16.

Washington. K. E. Gibson (July 21): On June 17 a report of insect injury to summer onions at Walla Walla was received and traced to a heavy infestation of the onion thrips. Since that time numerous reports of thrip injury to summer onions have been received. The presence of the thrips is not unusual, but ordinarily they do not make an appearance until onion bulbs have their growth. This season they appeared so early that the onion tops were damaged and the bulbs consequently stunted.

MINT

MINT FLEA BEETLE (Longitarsus waterhousei Kutsch.)

Oregon. D. C. Mote (July): Mint flea beetle not heretofore taken in Oregon, was found doing severe damage to a 17-acre field of mint in Marion County.

ARTICHOKE

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla Riley)

California. W. H. Lange (July 2): The University of California is conducting a study on the artichoke plume moth, which takes a loss of approximately 30 percent of the crop. The seriousness of the pest initiated the artichoke growers in San Mateo, Santa Cruz, and Monterey Counties to hold a meeting with the College of Agriculture, at which time the present project was started. Artichokes are also raised in Marin and San Luis Obispo Counties.

STRAWBERRY

STRAWBERRY LEAFROLLER (Ancylis comptana Froel.)

Ohio. T. H. Parks (July 22): This insect caused heavy damage to strawberry plantings near Dayton, Montgomery County, which is the only place in Ohio where the insect is serious.

Nebraska. M. H. Swenk (July 24): A strawberry patch in Howard County was reported on June 20 to be infested with the strawberry leaf roller.

Utah. G. F. Knowlton (July 12): Strawberry leaf roller moths are abundant and young worms are becoming numerous in strawberry patches in Utah County.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

Florida. J. R. Watson (July 20): A light infestation of the pepper weevil has been discovered in Manatee County, but only a fraction of 1 percent of last year's infestation at this time.

PEPPER MAGGOT (Zonosemata electa Say)

Connecticut. W. E. Britton (July 22): Z. electa collected on pepper at Hamden.

RHUBARB

RHUBARB CURCULIO (Lixus concavus Say)

Delaware. L. A. Stearns (June 22): Adults of the rhubarb curculio reported on rhubarb and specimens submitted for identification from Smyrna.

TOBACCO

TOBACCO WORMS (Phlegethontius spp.)

North Carolina. C. H. Brannon (July 25): The tobacco hornworm (P. quinquemaculata Haw.) has caused widespread damage to tobacco this year.

Tennessee. G. M. Bentley (July 16): The tomato worm (P. sexta Johan.) and the tobacco worm (P. quinquemaculata) were reported on tobacco in Unicoi County on June 27.

TOBACCO BUDWORM (Heliothis virescens Fab.)

North Carolina. C. H. Brannon (July 25): Damage by the budworm is spotted, some sections reporting heavy damage and other sections a light infestation.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina. C. H. Brannon (July 25): Damage by flea beetles has been serious in many sections.

C O T T O N I N S E C T S

BOLL WEEVIL (Anthonomus grandis Boh.)

Tennessee. G. M. Bentley (July 16): A limited attack on cotton in Wayne County was reported on June 30.

South Carolina. F. Sherman and associates (July 22): The cotton boll weevil is less prevalent than usual, and especially so in the upper Piedmont area--this following an unusually cold winter, low spring emergence, and severe early drought.

Alabama. J. M. Robinson (July 16): Boll weevil infestation at Auburn is light.

Mississippi. C. Lyle (July 23): Infestation throughout the month has continued to be low. In the southern part of the State cotton has about stopped fruiting and picking will begin in the older cotton in about 2 weeks.

Oklahoma. F. A. Fenton (July 20): Infestation is lower than it has been in the last 3 years. In the southeastern part of the State where the infestation is usually most severe it is increasing at present, owing to rainy weather; however, most of the cotton is well beyond the point where the weevil can cause serious injury.

Texas. F. L. Thomas (July 3): With the exception of northern Texas, control measures are needed in most areas where cotton fields are in the vicinity of shelter in which weevils could have spent the winter. On 52 farms in 21 counties from Jim Wells to McLennan, the average infestation

ranges from 9 percent in central Texas to 28 percent in the southern part.

BOLL WORM (Heliothis obsoleta Fab.)

Georgia. T. L. Bissell (July 6): A 40-acre field of cotton at Zebulon is infested and many squares are damaged.

Oklahoma. F. A. Fenton (July 20): The cotton boll worm has caused very little damage to cotton.

Texas. F. L. Thomas (July 10): Boll worm moths are leaving cornfields and beginning to lay eggs in cotton in Nueces County. (July 17): Boll worms are noticeable in many fields.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Mississippi. C. Lyle (July 23): No specimens of this insect have been found in Mississippi.

Louisiana. Miss. Weekly Cotton Insect Rpt., State Plant Bd. (July 21): The cotton leaf worm was found at Tallulah, just 17 miles from Vicksburg, Miss., on July 17. The worm was about one-third grown.

Arkansas. D. Isely (July 23): The cotton worm was reported from Jefferson County on July 16.

Texas. F. L. Thomas (July 3): Leaf worms are occurring in Cameron and Hidalgo Counties. Excepting the Burleson County record already reported, none has been received from central Texas. (July 17): A new generation of leaf worms, the fourth since this pest reached the State, is now appearing in Burleson County, and was first found in Bell County on July 14.

GARDEN WEBWORM (Loxostege similalis Guen.)

Oklahoma. F. A. Fenton (July 20): The garden webworm caused injury to cotton in the southwestern part of the State, records of serious injury being received from Dewey, Kiowa, Comanche, and Caddo Counties. The larvae in some cases have developed in alfalfa fields and when the alfalfa was destroyed by grasshoppers they migrated to cotton. In other cases the larvae developed in carelossweeds and when these were destroyed, they turned their attention to cotton. In Comanche County several thousand acres of cotton were ruined by the pest, with the damage there being reported as more serious to cotton than that caused by grasshoppers. This pest has reached the pupal stage.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Puerto Rico. L. C. Fife (May): Infestation is already rather high and in the long season before harvest an unusually heavy infestation

is expected. The only other plants in which the pink bollworm has been found are Mega (Montezuma speciosissima) and Clamor (Thespesia populnea) and only when these are growing within 2 or 3 miles of infested cotton.

#### COTTON APHIDS (Aphiidae)

North Carolina. C. H. Brannon (July 15): A serious infestation of Anuraphis maidi-radiciis Forbes on cotton has been reported from Sampson County.

Tennessee. G. M. Bentley (July 16): A general outbreak of the cotton aphid (Aphis gossypii Glov.) occurred on June 27 in Obion, Franklin, and Tipton Counties.

Missouri. L. Haseman (July 24): Since the middle of July there has been an unusually heavy outbreak of cotton aphids on cotton in south-eastern Missouri. Notwithstanding the abundance of ladybeetles, syrphid flies, and hymenopterous parasites, aphids have seemingly been able to do more damage during July than we have ever before known them to do.

#### COTTON FLEA HOPPER (Psallus seriatus Reut.)

Oklahoma. F. A. Fenton (July 20): In Bryan County the flea hopper infestation averages 11 percent, ranging from 5 to 14 hoppers per 100 plants.

Texas. F. L. Thomas (July 3): Cotton flea hoppers were more abundant during the week ending June 27 in Jim Wells, Nueces, and San Patricio Counties than in the other 23 counties worked. There was a slight decrease from the record of the previous week in Victoria County, and an increase for the counties farther up the coast. Flea hoppers are still increasing in the northern counties of the State. While the average number of hoppers found in central Texas was lower than in other parts of the State, it represents an increase for the farms in this area.

Texas. F. L. Thomas (July 10): Flea hoppers are not severe on the older cotton in southern Texas, but are increasing in Victoria, Fort Bend, Williamson, Ellis, Dallas, and Rockwall Counties. (July 17): There was a remarkable increase of young flea hoppers in Nueces and in Refugio Counties.

#### A LEAFHOPPER (Graphocephala versuta Say)

North Carolina. C. H. Brannon (July 15): Has caused serious damage to cotton in Iredell and Cleveland Counties. (Det. by Z. P. Metcalf.)

#### THRIPS (Thysanoptera)

Alabama. J. M. Robinson (July 16): Thrips are very active in Cullman, Marshall, Madison, Limestone, and Winston Counties.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

F O R E S T   T E N T   C A T E R P I L L A R (Malacosoma disstria Hbn.)

New England. J. V. Schaffner, Jr. (July 20): Severe infestations of the forest tent caterpillar occurred in Windham, Windsor, southern part of Orange, Addison, Rutland, and Bennington Counties, Vt., also in the vicinity of Charlestown, Sullivan County, N. H., and in the northwestern part of Berkshire County, in Massachusetts. In the regions that were severely infested in 1935 it was found, in most cases, that the defoliation was far more extensive this year. Dead and dying sugar-maple trees were noted at Bennington, Pawlet, and Randolph, Vt. Defoliated areas range from a few shade trees in a village to several hundred in larger towns, where nearly all sugar-maple and elm trees are almost completely stripped of foliage, or in sugar orchards and mixed-hardwood forests range from 1 to 100 acres or more. The most extensive areas completely defoliated in Vermont were noted in Rutland County, in the northern part of Bennington County, and in the northern part of Windsor County. In the counties mentioned above, thousands of acres are from 50 to 75 percent defoliated.

Michigan. R. Hutson (July 17): Adults are numerous in the vicinity of Gaylord, Cheboygan, and Traverse City.

A   T E N T   C A T E R P I L L A R (Malacosoma constricta Stretch)

Washington. I. W. Bales (July 20): Larvae were collected in the vicinity of Goldendale, in Klickitat County, on May 20. Nearly all of the oak trees were defoliated. This is the only record we have of the occurrence of this insect in the State.

W H I T E - M A R K E D   T U S S O C K   M O T H (Hemerocampa leucostigma S. & A.)

Ohio. E. W. Mendenhall (July 2): The white-marked tussock moth was found defoliating street and park trees in Piqua, Miami County.

G Y P S Y   M O T H (Porthetria dispar L.)

New England. A. F. Burgess (July 18): Reports indicate a considerable decrease in the number of acres showing from 75 to 100 percent defoliation in the New England States, as compared with last summer. In towns located within a radius of 25 miles of Boston, a comparative increase in the degree of defoliation is reported.

New Hampshire. L. H. Worthley (July 27): A report has been received from the district inspector at Concord that gypsy moth egg clusters were deposited in southern New Hampshire on June 30.

Maine. H. B. Peirson (July): There have been numerous heavy outbreaks during June and July in southern Maine. On July 23 adults were

flying and ovipositing at Newcastle. Chickadees are numerous in the area and are catching the moths. Hemlock, beech, maple, oak, and pine have been stripped.

SATIN MOTH (Stilpnotia salicis L.)

New England. J. V. Schaffner, Jr. (July 15): Reports received from widely separated localities in New England indicate that infestations of this pest are on the increase.

Maine. H. B. Peirson (July): Heavy feeding of satin moth on poplar and willow during June at Mechanic Falls and South Portland.

CANKERWORMS (Geometridae)

Maine. J. V. Schaffner, Jr. (July 15): Between Biddeford and Kennebunk about 50 acres of woodland was badly infested on June 15. Near Biddeford Pool 60 acres of woodland was 75 percent defoliated on June 25. At Cape Porpoise about 40 acres was 60 percent defoliated. At Kennebunkport about 40 acres was partly defoliated on June 16. Serious outbreak on street trees at Kennebunk, West Kennebunk, and Scarborough on June 15, some practically defoliated.

H. B. Peirson (July): Heavy infestation of fall cankerworm (Alsophila pometaria Harr.) at Bristol on June 26 on maple, oak, and witch-hazel. Heavy infestation on June 26 also of lime-tree looper (Erannis tiliaria Harr.) on maple, oak, and witch-hazel.

Minnesota. A. G. Ruggles and assistants (July): Spring cankerworm (Paleacrita vernata Peck.) and fall cankerworm very abundant on elms and boxelder trees in Thief River Falls. Trees completely defoliated for the third consecutive year.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

North Carolina. C. H. Brannon (July 27): The bagworm is unusually destructive throughout the State.

Mississippi. C. Lyle and assistants (July 23): Numerous complaints of bagworms have been received during the past month. Many cedars have been stripped at Aberdeen.

Arkansas. W. J. Baerg (July 16): Bagworms are much more abundant than last year. They have defoliated practically all of the boxelder trees in Fayetteville and Springdale; have stripped many of the soft maples; and have damaged severely many sycamores, hard maples, walnuts, and pecans. The caterpillars are from one-half to two-thirds grown, indicating that the damage is only about half complete.

Oklahoma. F. A. Fenton (July 20): Bagworms are injurious to small cedar and evergreen trees at the present time.

GREEN-STRIPED MAPLE WORM (Anisota rubicunda Fab.)

Tennessee. G. M. Bentley (July 16): Destroying shade trees in the Copperhill section of Polk County on June 25.

A CATERPILLAR (Datana sp.)

Kansas. H. R. Bryson (July 23): Datanas defoliated much of the native sumac. Considerable defoliation also occurred on apple, smokebush (Rhus cotinus), and oak.

ASH

A CARPENTER WORM (Prionoxystus sp.)

North Dakota. F. G. Butcher (July 21): Carpenter worms are generally abundant and apparently becoming more numerous in various localities. Have seen serious injury to ash, elm, and poplar in plantings at Fargo, Towner, Minot, and Williston.

A RHINOCEROS BEETLE (Xyloryctes satyrus Fab.)

Wisconsin. E. L. Chambers (July 20): Seven large ash trees in the vicinity of Mindoro were found to be heavily infested. Fifty-eight adults were counted under one tree at one time.

BEECH

EUROPEAN BEECH SCALE (Cryptococcus fagi Baer.)

New York and Connecticut. J. V. Schaffner, Jr. (July 22): R. C. Brown reports considerable increase in the intensity of European beech scale infestations at Roslyn, Long Island, and Scarsdale, N. Y., and at Hartford, Conn.

BOXELDER

BOXELDER LEAF ROLLER (Gracilaria negundella Chamb.)

Colorado. G. M. List (July 23): The boxelder leaf roller defoliated many boxelder trees in the foothills early in the season.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Bdv.)

New Jersey. E. Kostal (July 7): The catalpa sphinx has been very destructive on catalpa trees for the past several years at Morganville, in Monmouth County. The first caterpillars were noted on June 30 this season.

Ohio. E. W. Mendenhall (July 1): The catalpa sphinx is quite bad and has defoliated the catalpa trees in Rome, Franklin County.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Vermont. H. L. Bailey (July 23): The elm leaf beetle is very abundant in Middlebury and Windsor, moderately abundant in most of the larger towns in the southern half of the State, and present on the west side as far north as Winooski.

Massachusetts. J. V. Schaffner, Jr. (July 20): In some localities in the southern part of Worcester and Middlesex Counties some of the elms not sprayed are showing the effects of feeding by larvae.

New York. R. D. Glasgow (July 29): The elm leaf beetle is completely destroying the foliage of elm trees in parts of Albany. This insect is still troublesome in many parts of southeastern New York, but is much less generally injurious than it has been from time to time during the past 6 years.

Michigan. R. Hutson (July 17): The elm leaf beetle was reported from Grosse Pointe Park, in Wayne County.

Ohio. T. H. Parks (July 22): Damage from this insect has been limited largely to European elms in the larger cities. In Columbus the infestation is very local with serious defoliation occurring only in a few isolated points.

Idaho. C. Wakeland, University of Idaho (July 22): Unsprayed elms throughout southwestern Idaho are brown and defoliated.

A BARK BEETLE (Hylurgopinus rufipes Eich.)

Rhode Island. A. E. Stene (July 24): A check up on elm diseases this spring in southern Rhode Island has resulted in finding one elm infested.

ELM LEAF MINER (Kaliosysphinga ulmi Sund.)

Maine. H. B. Peirson (July): Late in June there was a fairly heavy infestation of elm leaf miner at Belfast and a heavy infestation at Bremen.

MOURNING-CLOAK BUTTERFLY (Hamadryas antiopa L.)

Georgia. T. L. Bissell (July 13): The spring elm caterpillar reported at Experiment June 1, 1936, on page 138 of the Bulletin, turned out to be the butterfly Polygonia interrogationis Fab., and not H. antiopa. It emerged about May 30.

Nebraska. M. H. Swenk (July 24): The spiny elm caterpillar (H. antiopa). was reported defoliating elm trees in Custer County on June 26.

ELM COCKSCOMB GALL (Colopha ulmicola Fitch)

Indiana. J. J. Davis (July 20): Elm cockscomb has been reported as abundant in many sections of the State.

Illinois. W. P. Flint (July 20): This aphid has been more than usually abundant on elms, many specimens having been received.

Michigan. R. Hutson (July 17): Cockscomb gall on elm is reported from Tawas City, Belleville, and East Lansing.

AN ELM LEAF APHID (Tuberculatus ulmifolii Monell)

Vermont. H. L. Bailey (July 23): The elm leaf aphid is very abundant on American elms in Montpelier and the streets and sidewalks are sticky with honeydew. Lesser infestations have been reported in St. Johnsbury and Barre.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

Ohio. E. W. Mendenhall (July 15): Young European elm scale is present on elm foliage. This pest has become quite troublesome, especially in nurseries and city plantings. On July 1 it was quite bad in Columbus on shade trees and on elms in nurseries.

Indiana. J. J. Davis (July 20): Reports of infestations have been received from Jonesboro and South Bend. The specimens from Jonesboro collected on June 27 were hatching when received.

Idaho. F. C. Craighead (May): Elm trees infested with the European elm scale at Wallace, in Shoshone County.

LINDEN

LINDEN WART GALL (Cecidomyia verrucicola O. S.)

Rhode Island and New York. E. P. Felt (July 25): The linden wart gall was extremely abundant on the lower branches of linden trees at Philipsdale, R. I., and at Beacon, N. Y.

LOCUST

LOCUST TWIG BORER (Ecdytolopha insiticihana Zell.)

Tennessee. G. M. Bentley (July 16): The locust twig borer was reported as damaging locust trees on the campus of the high school at Blanche, Lincoln County, on June 29.

MAPLE

A FRUIT WORM (Graptolitha laticinerea Grote)

Maine. H. B. Peirson (July): G. laticinerea defoliating maple on June 26 at Lincoln.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Ohio. E. W. Mendenhall (July 15): The cottony maple scale was found to some extent on soft-maple trees on the streets of Columbus.

Indiana. J. J. Davis (July 20): Cottony maple scale continues to be received from Lafayette northward. The first young hatching were observed on June 22 from specimens collected that day at Chesterton.

Michigan. R. Hutson (July 17): Cottony maple scale has been reported as numerous at Birmingham and on maple and quince at St. Joseph.

South Dakota. H. C. Severin (July 18): More abundant than usual. Attacking trees and vines. Egg masses are conspicuous.

MOUNTAIN ASH

MOUNTAIN ASH SAWFLY (Pristiphora geniculata Htg.)

Maine. H. B. Peirson (July): Numerous complaints have been received of defoliation of mountain ash in July.

New England. J. V. Schaffner, Jr. (July 24): Heavy infestations noted by H. J. MacAloney on July 17-22, throughout the northern part of New Hampshire and Vermont and south as far as Petersham, Mass.

OAK

OAK TWIG PRUNER (Hypermallus villosus Fab.)

Maine. H. B. Peirson (July): The oak twig pruner has been infesting central and southern Maine during the latter part of July. Numerous complaints received of injury.

New England, New York, and New Jersey. E. P. Felt (July 25): The maple and oak twig pruner is generally abundant and somewhat injurious in southwestern New England, southern New York, and northern New Jersey.

Connecticut. W. E. Britton (July 22): Apparently more prevalent than in 1935. Its work has been observed in many localities and specimens have been received from Beacon Falls, Hamden, Middletown, New Milford, and Wilton.

Michigan. R. Hutson (July 17): The oak twig pruner has been reported as working on apple at St. Joseph and at Belding.

PINE

SAWFLIES (Neodiprion spp.)

Maine. H. B. Peirson (July): Light larval feeding of Abbot's pine sawfly (N. pinetum Nort.) on pine at Sweden on July 10.

Massachusetts. J. V. Schaffner, Jr. (July 15): At Groton a plantation of about 4 acres of red pine was severely injured this spring by Neodiprion sp. On June 16, thousands of freshly formed cocoons were noted in leafmold around bases of trees.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.).

New York. J. V. Schaffner, Jr. (July 15): In a plantation of about 500 red-pine trees, 10 to 12 years of age, at Syosset, Long Island, N. Y., most of the trees are dead or dying. These trees have been heavily infested by the European pine shoot moth for several years past, which caused many post horns, bushy tips, and dead stubs, thus greatly weakening their condition. A few trees died in 1934, more in 1935, and this year the number of dead and dying greatly increased so that only a few living red pine remain at one end of the stand. An examination made a few days ago disclosed a severe infestation of Pissodes approximatus Hopk. (larvae, pupae, and adults) and some larvae of Hylobius pales Hbst.

Indiana. J. J. Davis (July 20): European pine shoot moth reported to be rather common on Mugho pine at South Bend.

A PINE TIP MOTH (Eucosma gloriola Heinr.)

Connecticut. M. P. Zappe (July 24): White pines in nearly all parts of the State infested. Injury more abundant than any year since insect was first noticed in Connecticut.

DOUGLAS-FIR CATERPILLAR (Euschausia argentata Pack.)

Colorado. J. A. Beal (May): A tent caterpillar, tentatively determined as E. argentata, was found doing considerable damage to young ponderosa pine on the San Juan and San Isabel National Forests, in southern Colorado. The tops of infested trees were badly defoliated by May 1 and the larvae have continued to feed throughout May. The larvae collected and placed in rearing were so heavily parasitized by a braconid, Meteorus acronyctae Mues., that very few reached maturity.

PITCH-MASS BORER (Parharmonia pini Kellicott)

Tennessee. G. M. Bentley (July 16): Pine-bark pitch borer reported damaging white pine at Crossville, Cumberland County, on July 14.

A TORTRICID (Tortrix pallorana Rob.)

Michigan. R. Hutson (July 17): Larvae were found defoliating all kinds of pine, except red pine, at Augusta and East Lansing. The larvae work on the new growth. This insect has been previously reported only from clover, strawberries, grass, herbs, and deciduous trees. (Det. A. Busck.)

COTTONY PINE SCALE (Pseudophilippa quaintancii Ckll.)

Alabama. J. M. Robinson (July 16): The cottony pine scale is conspicuously active on pine trees in Talladega and Cullman Counties.

PLANETREE

SYCAMORE SCALE (Stomacoccus platani Ferris)

California. Kern Co. Agr. Comm. Monthly News Letter (July 6): Sycamore scale was found on one tree this year for the first time in Kern County.

POPLAR

POPLAR SAWFLY (Trichiocampus viminalis Fall.)

Michigan. R. Hutson (July 17): The poplar sawfly has been numerous on Carolina poplar at East Lansing and Fenton.

VAGABOND GALL APHID (Mordwilkoja vagabunda Walsh)

Michigan. R. Hutson (July 17): Vagabond galls on poplar are numerous about East Lansing and Grosse Pointe Park.

SPRUCE

EUROPEAN SPRUCE SAWFLY (Diprion polytomum Htg.)

Maine. H. B. Feirson (July): European spruce sawfly larvae were feeding on spruce and adults were emerging in northwestern Maine on June 15-25. Adults emerged up to July 17. Larvae were feeding along the coast between Rockland and Brunswick on June 26.

New Hampshire. J. V. Schaffner, Jr. (July 24): On July 22 H. J. MacAloney reported that the European spruce sawfly infestations throughout New Hampshire and Vermont are very light. The first generation of the sawfly was completed by July 1 in southern New England.

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

Ohio. E. W. Mendenhall (July 19): The spruce budworm was found in some nurseries in Franklin County on ornamental trees.

Minnesota. A. G. Ruggles (July 22): Very abundant in a few northern counties.

INSECTS AFFECTING GREENHOUSE  
AND ORNAMENTAL PLANTS

FOUR-LINED PLANT BUG (Poecilocapsus lineatus Fab.)

Connecticut. W. E. Britton (July 22): Specimens of the four-lined plant bug or characteristic injury to tender leaves of aster, chrysanthemum, forsythia, honeysuckle, heliotrope, and pepper have been received from Branford, East Haven, Guilford, Hamden, Hartford, Meriden, New Haven, and Windsor.

CORN SAP BEETLE (Carpophilus pallipennis Say)

Nebraska. M. H. Swenk (July 24): From Dawes County on June 29 came a report that these beetles were destroying rose blooms and also attacking the blooms of regal lilies.

GLADIOLI

GLADIOLUS THRIPS (Taeniothrips simplex Morison)

Maryland. E. N. Cory (June 30): Thrips are generally attacking gladiolus.

Alabama. J. M. Robinson (July 16): Gladiolus thrips are causing concern at Talladega.

Mississippi. C. Lyle (July 23): Complaints of thrips on gladiolus were received from Moss Point, Hurley, and Meridian.

Wisconsin. E. L. Chambers (July 20): Severe damage to gladiolus has been observed by the nursery inspectors in many commercial plantings throughout the State.

HONEYSUCKLE

EUROPEAN HONEYSUCKLE LEAF ROLLER (Cerostoma xylostella L.)

Michigan. R. Hutson (July 17): C. xylostella was feeding on honeysuckle at Grand Rapids in June.

HOLLY

HOLLY FIREWORM (Rhopobota naevana ilicifoliana Kearf.)

Maryland. G. S. Langford (June 30): Holly fireworm attacking holly at Annapolis. (Det. by C. Heinrich.)

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana Walk.)

Maryland. G. S. Langford (June 30): This insect was collected on holly at Annapolis. (Det. by A. Busck.)

JAPANESE LANTERN

THREE-LINED LEMA (Lema trilineata Oliv.)

Wisconsin. C. L. Fluke (July 21): The three-lined lema is abundant in Madison on Japanese lanterns. Adults and larvae present on July 7.

OLEANDER

POLKA-DOT WASP MOTH (Syntomeida epialis Walk.)

Florida. J. R. Watson (July 20): The polka-dot wasp moth has reappeared in Gainesville on oleanders for the first time since the severe cold of December 1934.

PALM

ROYAL PALM BUG (Xylastodoris luteolus Barber)

Florida. E. W. Berger & G. B. Merrill (July 21): Royal palm bug is reported by J. C. Goodwin as being very abundant and severe on royal palms in Palm Beach County.

ROSE

ROSE CURCULIO (Rhynchites bicolor Fab.)

Nebraska. M. H. Swenk (July 24): The rose curculio was reported attacking roses in Johnson County on June 26 and in Grant County on July 3.

Utah. G. F. Knowlton (July 1): The rose snout beetle has been damaging rosebuds at Ogden.

ROSE SAWFLY (Caliroa aethiops Fab.)

Indiana. J. J. Davis (July 20): Rose sawfly reported abundant on rose at Syracuse on June 29.

I N S E C T S   A T T A C K I N G   M A N   A N D

D O M E S T I C   A N I M A L S

MAN

MOSQUITOES (Culicidae)

South Carolina. F. Sherman and associates (July 22): Around Clemson there is more mention of mosquitoes than usual, and in our observation a large percentage of those causing annoyance on porches are of the Anopheline group, perhaps resulting from garden fish pools not adequately stocked with top minnows.

Texas. E. C. Cushing (July 27): Aedes aegypti L. was very abundant on July 13 at San Antonio about residences throughout the city and was causing extreme annoyance to the inhabitants.

SANDBLIES (Culicoides spp.)

New York. R. D. Glasgow (July 29): Sand flies were abundant and annoying on a salt marsh near Woodmere, Long Island, on July 13.

Florida. F. C. Bishopp (July 18): Reports have come from a number of localities along the eastern coast of Florida of an unusual abundance of sand flies, and some physicians and others are associating these insects with a fever which has been prevalent in certain localities along that coast. The epidemiology of the disease appears to point to sand flies as possible vectors.

BEDBUGS (Cimex lectularius L.)

North Carolina. R. W. Leiby (July 15): Bedbugs are more common than ever in my experience in the State and complaints are received daily.

CHIGGERS (Trombicula irritans Riley)

Maryland. F. C. Bishopp (July 27): Chiggers have been unusually abundant and widespread this year in the vicinity of the District of Columbia. Areas where chiggers have not been known to occur have shown considerable infestation during July.

Missouri. L. Haseman (July 24): We have received fewer complaints of chiggers this year than for many years, in fact they have apparently caused no annoyance at all this year.

TICKS (Dermacentor spp.)

Utah. G. F. Knowlton (July 8): Ticks, D. andersoni Stiles, have been taken on man in Utah at Salt Lake City and Logan, and on cow and rabbit at Vernon.

Maryland. F. C. Bishopp (July 27): The American dog tick (D. variabilis Say), vector of Rocky Mountain spotted fever in the East, is still present in large numbers. Eleven cases of the disease, one resulting in death, have been reported from Maryland since July 1. Reports of cases by counties are: Anne Arundel, 3; Cecil, 1; Frederick, 2; Montgomery, 4; and Prince Georges, 1 (death). This brings Maryland's total for the year to 17 cases, of which four have resulted in death.

BLACK WIDOW SPIDER (Latrodectus mactans Fab.)

Rhode Island. A. E. Stene (July 24): A female black widow spider was recently sent in by a correspondent from Cranston.

Nebraska. M. H. Swenk (July 24): An inquiry as to the control of the black widow spiders that were infesting a storage cave in Custer County was received on July 10.

#### CATTLE

##### SCREW WORM (*Cochliomyia americana* C. & P.)

General. W. E. Dove (July): Screw worms are greatly reduced in the South-eastern States, but are numerous in the old infested area of Texas, with strong tendencies to spread toward the North Central States. For the first 3 weeks of July there were approximately one-seventh as many cases (2,931) in the Southern States east of Texas as there were for the same area during the corresponding period of last year (20,754 cases). The distribution of the pest was limited by the severe weather of last winter principally to the peninsular portion of Florida, but during the spring months local infestations were stamped out at Barbour, Ala., in western Florida, in some central counties of Georgia, and in Berkeley County, S. C. In the Western States the reservoir of infestations is in Texas, but specimens were also identified from the Imperial Valley of California and Eddy County, N. Mex. Several cases were also reported as occurring in hogs and sheep in Arizona. From 68 counties in Texas, 16,251 cases of screw worms were reported during the 3 weeks ending July 18 and 14,650 cases were reported from 63 counties during the single week ending July 24. The larger numbers occurred in the eastern and northern parts of the sheep- and goat-raising sections. In these sections shearing was somewhat later than elsewhere and was not completed before screw worm flies became active. The fly populations following shearing appear to be responsible for a northward spread of the pest, which was most noticeable along routes where animals were shipped. Screw worms infested 6 of the southern counties of Oklahoma and are now being reported from more northern localities of that State. Specimens were found in a cow in the stockyards of St. Louis, Mo., which had been shipped from Kenedy, Tex. Some were identified from a sheep in the Prospect Yards at Kansas City, which had been billed from Fort Worth, Tex., and 6 cases were found in one car of cattle shipped from San Angelo to a point in central Texas.

##### STABLE FLY (*Stomoxys calcitrans* L.)

Alabama. J. M. Robinson (July 16): The stable fly developed in Autauga and Mobile Counties during the first part of July in sufficient numbers to warrant control measures.

Missouri. L. Haseman (July 24): During July there has been one of the most annoying infestations of stable flies in central Missouri that we have ever had.

Nebraska. M. H. Swenk (July 24): Inquiries as to control of stable flies on livestock came from Thurston and Richardson Counties.

# HOUSEHOLD AND STORED - PRODUCTS INSECTS

## ANTS (Formicidae)

Mississippi. C. Lyle (July 23): Complaints about ants have been received almost daily during the month. In most cases they were unaccompanied by specimens, but undoubtedly the fire ant (Solenopsis xyloni McCook) and the tiny black ant (Monomorium minimum Buckl.) were the chief offenders. The Argentine ant (Iridomyrmex humilis Mayr) was causing trouble in some colonies of bees at Kosciusko. Dorymyrmex pyramicus Roger was reported as attacking calves at Nettleton on July 3, causing sores on the bodies of animals.

Nebraska. M. H. Swenk (July 14): On July 14 the large black carpenter ant (Camponotus herculeanus pennsylvanicus Deg.) was reported working in a living tree in Douglas County.

Oklahoma. C. F. Stiles (July 25): The dry weather of the past 3 years has been very favorable for the harvester ants (Pogonomyrmex barbatus F. Smith). They are so numerous in Payne County at the present time that a petition has been circulated by the farmers asking for assistance in control.